

AMENDMENTS TO THE CLAIMS

Please cancel claims 3, 4, 7, 9, and 10 without prejudice or disclaimer.

Please amend claims 1, 2, 5, 6, 8, and 11-19 as follows.

1. (Currently Amended) A block polymer compound having at least three block segments, comprising:

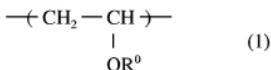
block segments A, B, and C arranged in succession,

wherein the block segment C is most solvent-attractive hydrophilic while the block segment A is most solvent-repulsive; and hydrophobic,

the block segment C has an ionic group or an acidic group, and

the block segment C is a repeating unit represented by the following general formula

(1):



wherein R⁰ represents -X-(COOH), or -X-(COO-M); X represents a linear, branched or cyclic alkylene group with 1 to 20 carbon atoms, -(CH(R⁵)-CH(R⁶)-O)-, -(CH₂)_m-CH₃-, -(CH₂)_m-(O)_n-(CH₂)_q-CH₃-; or a structure in which at least one of methylene groups therein is replaced by a carbonyl group or an aromatic ring structure; r represents 1 or 2; p represents an integer from 1 to 18; m represents an integer from 0 to 35; n represents 1 or 0; q represents an integer from 0 to 17; M represents a monovalent or polyvalent cation; and R⁵ and R⁶, which may be the same or different, each independently represent an alkyl group.

at least either one of said block segments has an ionic group or an acidic group.

2. (Currently Amended) The block polymer compound according to claim 1, wherein at least either one of said the block segments A and B is a stimulus-responsive block segment.

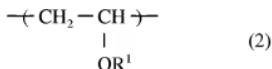
3-4. (Cancelled)

5. (Currently Amended) The block polymer compound according to claim 1, wherein said the block polymer is amphiphilic.

6. (Currently Amended) The block polymer compound according to claim 1, wherein said the block polymer includes a polyvinyl ether structure as a repeating unit structure.

7. (Cancelled)

8. (Currently Amended) The block polymer compound according to claim 1, wherein at least either one of said the block segments A, B and C A and B is a repeating unit represented by the following general formula (2):



wherein R¹ is a group selected from the group consisting of a linear, branched or cyclic alkyl group with 1 to 18 carbon atoms, -Ph, -Pyr, -Ph-Ph, -Ph-Pyr, -(CH(R⁵)-CH(R⁶)-O)_p-R⁷ and

$-(CH_2)_m-(O)_n-R^7$, in which a hydrogen atom in an aromatic ring may be replaced by a linear or branched alkyl group with 1 to 4 carbon atoms and a carbon atom in an aromatic ring may be replaced by a nitrogen atom;

p represents an integer from 1 to 18; m represents an integer from 1 to 36; n represents 0 or 1;

R^5 and R^6 each independently represent a hydrogen atom or $-CH_3$;
 R^7 represents a hydrogen atom, a linear, branched or cyclic alkyl group with 1 to 18 carbon atoms, $-Ph$, $-Pyr$, $-Ph-Ph$, $-Ph-Pyr$, $-CHO$, $-CH_2CHO$, $-CO-CH=CH_2$, $-CO-C(CH_3)=CH_2$, or $-CH_2COOR^8$, in which, in case R^7 is other than a hydrogen atom, a hydrogen atom bonded to a carbon atom in R^7 may be replaced by a linear or branched alkyl group with 1 to 4 carbon atoms, $-F$, $-Cl$ or $-Br$ while a carbon atom in an aromatic ring may be replaced by a nitrogen atom; R^8 represents a hydrogen atom or an alkyl group with 1 to 5 carbon atoms; Ph represents a phenyl group; and Pyr represents a pyridyl group.

9.-10. (Cancelled)

11. (Currently Amended) A polymer-containing composition comprising a block polymer compound, a solvent or a dispersion medium, and a functional material,

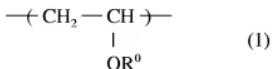
wherein said the block polymer compound comprises block segments A, B, and C arranged in succession,

said the block segment C is most solvent attractive hydrophilic while said the block segment A is most solvent repulsive hydrophobic, and

the block segment C has an ionic group or an acidic group, and

the block segment C is a repeating unit represented by the following general formula

(1):



wherein R⁰ represents -X-(COOH), or -X-(COO-M); X represents a linear, branched or cyclic alkylene group with 1 to 20 carbon atoms, -(CH(R⁵)-CH(R⁶)-O)-, -(CH₂)_m-CH₂-r-, -(CH₂)_m-(O)-, -(CH₂)_q-CH₃, or a structure in which at least one of methylene groups therein is replaced by a carbonyl group or an aromatic ring structure; r represents 1 or 2; p represents an integer from 1 to 18; m represents an integer from 0 to 35; n represents 1 or 0; q represents an integer from 0 to 17; M represents a monovalent or polyvalent cation; and R⁵ and R⁶, which may be the same or different, each independently represent an alkyl group,

at least either one of said block segments has an ionic group or an acidic group.

12. (Currently Amended) The polymer-containing composition according to claim 11, wherein said the functional material is included in said the block polymer compound.

13. (Currently Amended) The polymer-containing composition according to claim 11, wherein said the functional material is a colorant.

14. (Currently Amended) A method of increasing the viscosity of a polymer-containing composition which comprises:

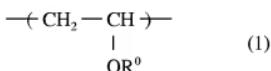
a block polymer compound comprising block segments A, B, and C arranged in succession, a solvent or a dispersion medium, and a functional material, wherein

the block segment C is most solvent attractive hydrophilic while the block segment A is most solvent repulsive hydrophobic, and

the block segment C has an ionic group or an acidic group, and

the block segment C is a repeating unit represented by the following general formula

(1):



wherein R^0 represents $-\text{X}-(\text{COOH})$, or $-\text{X}-(\text{COO-M})$; X represents a linear, branched or cyclic alkylene group with 1 to 20 carbon atoms, $-(\text{CH}(\text{R}^5)-\text{CH}(\text{R}^6)-\text{O})_p-(\text{CH}_2)_m-\text{CH}_3$, $-\text{CH}_2-\text{O}_n-\text{CH}_2-\text{CH}_3$, or a structure in which at least one of methylene groups therein is replaced by a carbonyl group or an aromatic ring structure; r represents 1 or 2; p represents an integer from 1 to 18; m represents an integer from 0 to 35; n represents 1 or 0; q represents an integer from 0 to 17; M represents a monovalent or polyvalent cation; and R^5 and R^6 , which may be the same or different, each independently represent an alkyl group.

at least either one of said block segments has an ionic group or an acidic group;

the method comprising a step of bringing said the composition in contact with hydrogen ions or metal cations to increase the viscosity of said the composition.

15. (Currently Amended) The viscosity increasing method according to claim 14, wherein a stimulus is given to said the composition, thereby causing a phase change of said the block segment B.

16. (Currently Amended) An image forming method comprising a step of applying an ink onto a recording medium to conduct recording, wherein

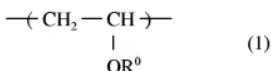
said the ink is a polymer-containing composition including a block polymer compound comprising block segments A, B, and C arranged in succession, a solvent or a dispersion medium, and a functional material,

the block segment C is most solvent attractive hydrophilic while the block segment A is most solvent repulsive hydrophobic, and

the block segment C has an ionic group or an acidic group, and

the block segment C is a repeating unit represented by the following general formula

(1):



wherein R⁰ represents -X-(COOH), or -X-(COO-M); X represents a linear, branched or cyclic alkylene group with 1 to 20 carbon atoms, -(CH(R⁵)-CH(R⁶)-O)_p-(CH₂)_m-CH₃, -
-(CH₂)_n-(O)-(CH₂)_q-CH₃, or a structure in which at least one of methylene groups therein is replaced by a carbonyl group or an aromatic ring structure; r represents 1 or 2; p represents an integer from 1 to 18; m represents an integer from 0 to 35; n represents 1 or 0; q represents an

integer from 0 to 17; M represents a monovalent or polyvalent cation; and R⁵ and R⁶, which may be the same or different, each independently represent an alkyl group.

at least either one of said block segments has an ionic group or an acidic group.

17. (Currently Amended) The image forming method according to claim 16, wherein an energy is applied to said the ink to eject said the ink onto said the recording medium.

18. (Currently Amended) The image forming method according to claim 16, further comprising a step of bringing said the composition in contact with hydrogen ions or metal cations to increase the viscosity of said the composition.

19. (Currently Amended) An image forming apparatus for conducting recording by applying an ink onto a recording medium, wherein

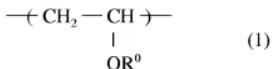
said the ink is a polymer-containing composition including a block polymer compound comprising block segments A, B, and C arranged in succession, a solvent or a dispersion medium, and a functional material,

the block segment C is most solvent attractive hydrophilic while the block segment A is most solvent repulsive hydrophobic, and

the block segment C has an ionic group or an acidic group, and

the block segment C is a repeating unit represented by the following general formula

(1):



wherein R⁰ represents -X-(COOH), or -X-(COO-M); X represents a linear, branched or cyclic alkylene group with 1 to 20 carbon atoms, -(CH(R⁵)-CH(R⁶)-O)_p-(CH₂)_m-CH_{3-r-s}-(CH₂)_m-(O)_n-(CH₂)_q-CH_{3-r} or a structure in which at least one of methylene groups therein is replaced by a carbonyl group or an aromatic ring structure; r represents 1 or 2; p represents an integer from 1 to 18; m represents an integer from 0 to 35; n represents 1 or 0; q represents an integer from 0 to 17; M represents a monovalent or polyvalent cation; and R⁵ and R⁶, which may be the same or different, each independently represent an alkyl group.

at least either one of said block segments has an ionic group or an acidic group.